Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of coupling a first optical transmission means embedded within a composite to a second optical transmission means external to the composite, the method comprising:

providing an optical processing means for optically processing light to or from the first optical transmission means, said optical processing means being disposed on a micro substrate embedded within the composite;

securing the first optical transmission means to the optical processing means using the micro substrate;

locating the position of the first optical transmission embedded within the composite;

forming a passageway within the composite to the first optical transmission means; and

establishing an optical connection between the first and second optical transmission means at the intersection of the passageway and the first optical transmission means.

Claim 2. (Original) A method according to Claim 1, further comprising providing a high-quality optical interface surface at the intersection of the passageway and the first optical transmission means.

Claim 3. (Currently Amended) A method according to Claim [[1,]] 2, wherein the step of forming a passageway comprises drilling or machining through the composite from an exterior surface thereof to the first optical transmission means and severing the first optical transmission means.

Claim 4. (Previously Presented) A method according to Claim 3, wherein the step of providing an optical interface surface comprises polishing a severed portion of the first optical transmission means.

Claim 5. (Previously Presented) A method according to Claim 1, wherein the step of forming a passageway comprises: drilling or machining through the composite to the first optical transmission means; providing the passageway with a protective plug for closing the passageway; and removing the protective plug prior to the step of forming an optical connection.

Claim 6. (Previously Presented) A method according to Claim 1, wherein the step of forming a passageway comprises irradiating an exterior

surface of the composite using a laser to access the first optical transmission means.

Claim 7. (Original) A method according to Claim 6, wherein the laser irradiation step comprises using an excimer laser.

Claim 8. (Previously Presented) A method according to Claim 6, further comprising preventing light used in the laser irradiation step from being optically coupled with the first optical transmission means.

Claim 9. (Previously Presented) A method according to Claim 8, wherein the preventing step comprises differentiating between the wavelengths of the light used in the laser machining step and the light used in the first optical transmission means, and preventing transmission of light used in the laser machining step to the first optical transmission means.

Claim 10. (Previously Presented) A method according to Claim 8, wherein the preventing step comprises allowing the light used in the laser machining step to be transmitted to at least one light beam absorbing means provided within the composite.

Claim 11. (Previously Presented) A method according to Claim 1, wherein the step of locating the position of the first optical transmission means comprises using an embedded detectable position marker to indicate the location of the first optical transmission means within the composite.

Claim 12. (Currently Amended) A method according to Claim [[1,]] 11, wherein the step of forming a passageway comprises using a depth marker to indicate when the passageway has been formed to the correct depth.

Claim 13. (Previously Presented) A method according to Claim 12, wherein the depth marker comprises the position marker.

Claim 14. (Currently Amended) A method according to Claim [[11,]] 12, wherein one of the position marker [[or]] and the depth marker comprises a sacrificial coating and the laser irradiation step further comprises removing the coating after formation of the passageway to access the first optical transmission means.

Claim 15. (Previously Presented) A method according to Claim 11, wherein the step of locating the position of the first optical transmission means or the step of forming a passageway comprises locating the position of the position marker or the depth marker within the composite using an imaging technique.

Claim 16. (Original) A method according to Claim 15, wherein the imaging technique comprises an X-ray imaging process.

Claim 17. (Previously Presented) A method according to Claim 2, wherein the step of establishing an optical connection comprises providing a thermal expanded core optical fibre at the optical interface surface.

Claim 18. (Previously Presented) A method according to Claim 1, further comprising aligning an interface means within the passageway to be in optical communication with first optical transmission means at the interface surface, and arranging for the interface means to be accessible to the second optical transmission.

Claim 19. (Original) A method according to Claim 18, wherein the aligning step comprises using an alignment structure embedded within the composite to align the interface means with the first optical transmission means.

Claim 20. (Original) A method according to Claim 19, further comprising forming an alignment structure embedded within the composite using an X-ray lithographic technique.

Claim 21. (Cancelled)

Claim 22. (Currently Amended) A method according to Claim [[21,]] 1, wherein the step of optically processing light comprises steering a light beam.

Claim 23. (Original) A method according to Claim 22, wherein the steering step comprises using a beam splitter or a micro-turning mirror.

Claim 24. (Currently Amended) A method according to Claim [[21,]] 1, wherein the step of optically processing light comprises collimating a light beam.

Claim 25. (Original) A method according to Claim 24, wherein the light beam collimating step comprises using a graded index lens or a graded index fibre.

Claim 26. (Cancelled)

Claim 27. (Previously Presented) A method according to Claim 26, further comprising providing the alignment structure on the micro-substrate.

Claim 28. (Withdrawn) A method according to Claim 1, wherein the first optical transmission means comprises an elongate structure and the step of establishing an optical connection is effected to a side of the elongate structure.

Claim 29. (Withdrawn) A method according to Claim 28, wherein the step of providing an optical interface surface comprises providing a first evanescent coupling means optically connected to the first optical transmission means.

Claim 30. (Withdrawn) A method according to Claim 29, wherein the step of establishing an optical connection comprises providing a second evanescent coupling means optically connected to the second optical transmission means and aligning the second evanescent coupling means with the first evanescent coupling means.

Claim 31. (Withdrawn) A method according to Claim 28, wherein the first optical transmission means and the second optical transmission means each

comprise a D-fibre and the step of establishing an optical connection comprises aligning flat faces of the D-fibres together.

Claim 32. (Withdrawn) A method according to Claim 31, further comprising providing the D-fibres with support structures at the optical interface.

Claim 33. (Currently Amended) An optical coupling for connecting a first optical transmission means embedded within a composite to a second optical transmission means external to the composite, the coupling comprising:

an optical processing means optically connected to the first optical transmission means for processing light to or from the first optical transmissions means, said optical means being provided on a micro substrate and secured to the first optical transmission means, wherein the micro substrate and optical processing means are embedded within the composite;

means for locating the position of the first optical transmission means embedded within the composite;

a passageway formed within the composite to the embedded first optical transmission means; and

an optical connection established between the first and second optical transmission means at the intersection of the passageway and the first optical transmission means.

Claim 34. (Original) An optical coupling according to Claim 33, further comprising a high-quality optical interface surface provided at the intersection of the passageway and the first optical transmission means.

Claim 35. (Currently Amended) An optical coupling according to Claim [[33,]] 34, wherein the passageway comprises a drilled or machined orifice through the composite from an exterior surface thereof to the first optical transmission means to a depth sufficient to sever the first optical transmission means.

Claim 36. (Previously Presented) An optical coupling according to Claim 35, wherein the optical interface surface comprises a polished severed portion of the first optical transmission means.

Claim 37. (Previously Presented) An optical coupling according to Claim 33, wherein the passageway comprises a drilled or machined orifice through the composite to the first transmission means; and a protective plug provided in the passageway for closing the passageway, the protective plug being removable prior to forming an optical connection.

Claim 38. (Previously Presented) An optical coupling according to Claim 33, wherein the passageway comprises a laser irradiated orifice through the composite to the first optical transmission means.

Claim 39. (Original) An optical coupling according to Claim 38, further comprising means for preventing light used in the formation of the laser

irradiated orifice from being optically coupled with the first optical transmission means.

Claim 40. (Original) An optical coupling according to Claim 39, wherein the preventing means is arranged to differentiate between the wavelengths of the light used in the formation of the laser irradiated orifice and the light used in the first optical transmission means, and to block transmission of light used in the formation of the laser irradiated orifice to the first optical transmission means.

Claim 41. (Previously Presented) An optical coupling according to Claim 39, wherein the preventing means comprises at least one light beam absorbing means embedded at an appropriate position within the composite.

Claim 42. (Previously Presented) An optical coupling according to Claims 33, wherein the locating means comprises an embedded detectable position marker to indicate the position of the first optical transmission means within the composite.

Claim 43. (Currently Amended) An optical coupling according to Claim [[33,]] 42, further comprising a depth marker embedded within the composite to indicate when the passageway has been formed to the correct depth.

Claim 44. (Previously Presented) An optical coupling according to Claim 43, wherein the depth marker comprises the position marker.

Claim 45. (Currently Amended) An optical coupling according to Claim [[42,]] 43, wherein one of the position marker [[or]] and the depth marker comprises a sacrificial coating which is arranged to be removable after the formation of the passageway to access the first optical transmission means.

Claim 46. (Original) An optical coupling according to Claim 45, wherein the coating comprises a reflective coating.

Claim 47. (Original) An optical coupling according to Claim 46, wherein the coating comprises a metallic coating.

Claim 48. (Previously Presented) An optical coupling according to Claim 34, wherein the optical interface surface is provided at a thermally expanded core optical fibre connected to the first optical transmission means.

Claim 49. (Previously Presented) An optical coupling according to Claim 33, further comprising an interface means alignable within the passageway to be in optical communication with first optical transmission means at the optical interface surface, the interface means being arranged to be accessible to the second optical transmission means.

Claim 50. (Original) An optical coupling according to Claim 49, further comprising an alignment structure embedded within the composite for aligning the interface means with the first optical transmission means.

Claim 51. (Cancelled)

Claim 52. (Original) An optical coupling according to Claim 51, wherein the optical processing means comprises means for steering a light beam.

Claim 53. (Original) An optical coupling according to Claim 52, wherein the steering means comprises a beam splitter or a micro-turning mirror.

Claim 54. (Previously Presented) An optical coupling according to Claim 51, wherein the optical processing means comprises means for collimating a light beam.

Claim 55. (Original) An optical coupling according to claim 54, wherein the light beam collimating means comprises a graded index lens or a graded index fibre.

Claim 56. (Previously Presented) An optical coupling according to Claim 51, wherein the optical processing means comprises at least one of the group comprising an optical grating element, a wave-guide, a wave plate, a hologram and an optical filter.

Claim 57. (Cancelled)

Claim 58. (Withdrawn) An optical coupling according to Claim 57, wherein the alignment structure is provided on the micro-substrate.

Claim 59. (Withdrawn) An optical coupling according to Claim 33, wherein the first optical transmission means comprises an elongate structure and the optical interface surface is provided at a side of the elongate structure.

Claim 60. (Withdrawn) An optical coupling according to Claim 59, wherein the optical connection comprises a first evanescent coupling means optically connected to the first optical transmission means.

Claim 61. (Withdrawn) An optical coupling according to Claim 60, wherein the optical connection comprises a second evanescent coupling means optically connected to the second optical transmission means and optically aligned with the first evanescent coupling means.

Claim 62. (Withdrawn) An optical coupling according to Claim 59, wherein the first optical transmission means and the second optical transmission means each comprise a D-fibre which are coupled together by aligning flat faces of the D-fibres together.

Claim 63. (Withdrawn) An optical coupling according to Claim 62, further comprising support structures for the D-fibres at the optical interface.

Claim 64. (Previously Presented) An optical coupling according to Claim 33, wherein the first and/or second optical transmission means comprises an optical fibre.

Claim 65. (Cancelled)